January 4, 1982

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Attn: Mr. Edward J Schwartzbauer, Esq

Gentlemen

Subj: Sampling of USGS Well 23
St. Louis Park, Minnesota

In response to your request, we are pleased to present our suggestions for the sampling of USGS Well 23. We have reviewed the following information sent to us by you:

"Work Statement," prepared by MPCA staff and Hickok & Associates detailing project tasks for completion of the project.

Outline of each project task.

Our suggestions concern Task II, Investigation of Former Republic Creosote Supply Well (USGS Well W23).

We understand the well was originally drilled to a depth of 909'. Debris was present in the well at a depth of 595' at the time it was logged in 1978, and it is presumed the well is filled from this depth to the 909' bottom depth. 12" Diameter casing extends from the surface to a depth of 60'. An inner casing of 10" diameter pipe extends from the surface to a depth of 257'. A 7" diameter casing exists between 230' and 406'. A packer has been placed in the 7" casing at at a depth of 250', and is attached to a 4" diameter casing which extends from the surface to a depth of 400'. It is presumed the hole is uncased below a depth of 406'.

We suggest the well be cleaned (remove debris and fill) to the original depth, using cable tool methods. We suggest relatively undisturbed

samples of the debris be obtained at 50' intervals (600', 650', 700', 750', 800', 850' and 900') using a 2 1/2" O.D. split-barrel sampler. The sampler will be equipped with 1 1/2" O.D. brass liner. The sampler will be driven a total of 24" and the sample contained within the brass liner wrapped in aluminum foil (shiny side out) and frozen in the field. Upon return to the laboratory, the samples will be extruded, placed in glass jars with teflon lined lids and will be maintained in a frozen state in anticipation of chemical analysis. A log of the material recovered during clean-up operations will be kept and additional samples taken from areas of visible contamination. Upon completion of the clean-out operation, we suggest reinstallation of a packer at the 250' depth thereby sealing off the 7" casing. We suggest the well be left intact, anticipating possible future use.

We understand coal-tar is regarded as hazardous waste by the State, and should be treated in accordance with all provisions in the MPCA rules on hazardous waste. Any hazardous waste recovered during well cleaning operations will be collected and stored in 55 gal grums. The containers will be suitable for interstate transportation. The filled containers will be stored on-site until proper disposal of the hazardous waste by the State.

We have discussed the well cleaning operation with Mr Warren Lindecke of Layne, Minnesota, a well drilling firm. They advise us that clean-out of the well would probably progress at a rate of 15' to 20' per day. Typical rates for cable tool drilling rigs range from $100-125/hour, yielding a daily rate of $800-1,000/day. Drilling costs therefore, would be in the range of $13,000-16,000. We estimate a mobilization, demobilization and container storage charge of less than $10,000, yielding a cost of well clean-up in the range of $23,000-26,000.

In addition to well clean-up costs, we anticipate costs ranging from about $7000 to $8000 for field coordination and supervision, sample collection and storage, and preparation of a report. We anticipate a total cost for the work discussed above which could range from $30,000 to $34,000.

If your have any questions concerning our suggestions, or if we could be of future service, please contact us.

Very truly yours

Allen R. Rechnagel
Environmental Specialist

Richard D Stehly, P.E.
Chief Engineer

ARR/RDS/pw